GUESS PAPER 2021

کامیابی کا تعویذ

CHEMISTRY

2ND YEAR

امتحان میں 100% کامیابی کی گارنٹی

☆ پیپر Setter کے ذہن کو مد نظر رکھ کر تیار کیے گئے سوالات

☆ یاد رکھیں ! اب وقت انتہائی کم رہ گیا ہے۔

★ صرف ایک ماہ کے اندر بورڈ امتحان کی مکمل تیاری کریں۔

اہم ترین مختصر، انشائیہ اور حل شدہ معروضی سوالات کے ساتھ

پنجاب کے تمام بورڈ کے لیے (اعلیٰ نمبروں کے حصول کی ضمانت)

اب فیل ہونا بھول جائیں

ہم نے تو چراغ جلا کر سر راہ رکھ دیا

اب جس کے جی میں آئے وہی پائے روشنی

Guess papers are handy for practicing. You can solve many guess papers and get an idea about where you stand regarding your exam preparation. You can set a timer to practice Attempting questions within the required limit. With regular practice, your mistakes will be minimal and your speed will increase.

SPECIAL EFFORTS: SIR M QADEER

Objective Type

Encircle the Correct Option.

1) When hydrogen losses its electron to form H+ ion , then it resembles .
a) Semi metals b) Halogens c) Alkali metals ✔ d) Noble gases
2) Hydrogen combine with other element through ______ bond .
a) Ionic b) Covalent ✔ c) Co-ordinate covalent d) None of these
3) Hydrogen can form bond with ______ element at a time .
a) 1 ✔ b) 2 c) 3 d) 4
4) Hydrogen is placed at the top of elements in group ______ .
a) HA b) HB c) IA ✔ d) IB
5) Hydrogen is a _________ like most of halogens .
a) Solid b) Liquid c) Gas ✔ d) None of these
6) Which one is not a periodic property ?
a) Ionization energy b) Density ✔ c) Atomic radii d) Hydration energy
7) Which of the following elements has lowest - ionization energy ?
a) Beryllium b) Boron ✔ c) Carbon d) Oxygen
8) Which elements has lowest melting point ?
a) Beryllium b) Magnesium ✔ c) Calcium d) Barium
9) Which element form an ion with charge + 3 ?
a) Chromium ✔ b) Copper c) Lead d) Zinc
10) The strength of binding energy of transition elements depends upon ?
a) Number of electron pairs b) Number of neutrons c) Number of unpaired electrons ✔ d) Number of protons
11) Alkali metals are .
a) Acidic in nature b) Strong oxidizing agent c) Amphoteric in nature d) Strong reducing agents ✔
12) Element (cs) cesium show resemblance with .
a) Ca b) Cr c) Both A & B d) Fr ✔
13) Which of the following has the highest first ionization energy ?
a) B b) C c) O ✔ d) N
14) As we go from left to right in 4th period , the shielding effect ?
a) First decreases then increases b) Increases regularly c) First increases then decreases d) Remains constant ✔
15) Electronic configuration of four elements A,B,C,D are as follows , which will be the most metallic ?
a) A = 2, 8, 4 b) B = 2, 8, 6 c) C = 2, 8, 8, 1 ✔ d) D = 2, 8, 8, 7
16) Which of the following has the highest melting point ?
a) NaCl b) NaBr c) NaI d) NaF ✔
17) Out of Na , Mg , Na+1 & Mg^{+2} , the highest ionization energy is of .
a) Na b) Na^{+} c) Mg d) Mg^{+2} ✔
18) The second electron affinity of oxygen is .
a) -141 kJ mol^{-1} b) +780 kJ mol^{-1} ✔ c) -337 kJ mol^{-1} d) +29 kJ mol^{-1}
19) Which one of the following elements can have only negative oxidation states .
a) Br b) F ✔ c) I d) Cl
20) In down cell $CaCl_2$ is added to N2Cl to
a) Increases solubility b) Increase conductivity c) Increase the dissociation d) Lower its melting point ✔
21) In Down's cell if moisture is present then , most likely products are .
a) Na , Cl_2 ✔ b) NaOH , H_2 , Cl_2 c) Na , HCl d) H_2O_2
22) Sodium when dropped in water catches fire because .
a) It is a metal b) It is highly electropositive in nature c) It has high electron affinity d) H2 gas is eveloved in the reaction which catches fire due to exothermic reaction ✔
23) Metallic luster exhibited by Na is explained by .
a) Diffusion of sodium b) Excitation of free protons c) Oscillation of loose electrons ✔ d) Existence of body centered cubic lattice
24) When NaCl is dissolved in water , sodium ion becomes
a) Oxidized b) Hydrolyzed c) Hydrated ✔ d) Reduced
25) Which of the following reaches at the anode during the electrolyses of brine in Nelson's cell .
a) H2 b) Na c) Cl2 ✔ d) O_2
26) In Nelson's cell the solution coming out of cathode compartment contains 16% NaCl , the % age of NaOH in the solution is .
a) 11 % ✔ b) 84 % c) 50 % d) 2 %
27) Which is the most important by product in the manufacturing of NaOH ?
a) Na_2CO_3 b) Cl_2 ✔ c) KOH d) K_2CO_3
28) Sodium hydroxide is manufactured on large scale in __________ .
a) Down cell b) Diaphragm cell ✔ c) Both A & B d) None of these
29) The aqueous solution of Borax .
a) Acidic b) Alkaline c) Amphoteric ✔ d) Manual
30) Which is used in the leather industry ?

a) Tetra boric acid b) Borax ✔ c) Boric acid d) Boric oxide

31) The compound formed in Borax bead test is .

a) Metal metaborate✔ b) Metal boride c) Metallic boron d) Boron oxide

32) The formula of pyroboric acid is .

a) H_3BO_3 b) HBO_2 c) $H_2B_4O_7$ d) $H_6B_4O_9$ ✔

33) Borax can be prepared by reacting boric acid with .

a) Caustic soda b) Caustic potash c) Soda ash ✔ d) Lunar caustic

34) Borax bead test is not performed for .

a) Cu b) Ni c) Zn ✔ d) Co

35) Borate glass contains .

a) H_3BO_3 b) Ca_2B6O_{11} c) HBO_2d) Borax ✔

36) The solubility of Borax at 1000C is .

a) 1400 gram in 100 gram of H_2O b) 4 gram in 100 gram of H_2O c) 99 gram in 100 gram of H_2O d) 99.3 gram in 100 gram of H_2O ✔

37) Which of the following does not form boric acid ?

a) Borax + HCl b) Borax + H_2SO_4 c) Borax + H_2O d) Borax + Copper ✔

38) Which of the following is soluble in water ?

a) Dioxoboric acid b) Boric anhydride✔ c) Trioxoboric acid d) Sodium Dioxoborate

39) Orthoboric acid when heated to red hot gives .

a) Boric anhydride✔ b) Pyroboric acid c) Metaboric acid d) Tetraboric acid

40) If saturate solution of Borax is allowed to crystallize above 620C , crystals obtained are .

a) Decahydrate b) Pentahydrate✔ c) Hepthadrate d) Anhydraous

41) Which of the following radicals give blue colour (in cold and hot state) in oxidizing flame when subjected to Borax Bead test ?

a) Cu^{+2} ✔ b) Co^{+2} c) Cr^{+3} d) Ni^{+2}

42) Which of the following is non metal ?

a) B ✔ b) Al c) Ga d) In

43) Aluminum is corroded in coastal places near the sea , because protective oxide film .

a) Reacts with sea water b) Is removed by sea water c) Reacts with sand particles d) Is attacked by salt present in sea water ✔

44) In electrolysis of alumina , cryolite is added .

a) To decrease the M.P of Al_2O_3 ✔ b) To minimize the anodic effect c) To increase electrical conductivity d) To remove impurity form alumina

45) Which of the following statements is correct ?

a) Aluminiumis used for making ships b) Aluminium is less conductor of electricity than iron c) Aluminiumis used to remove air bubbles form molten metals in their extraction methods✔ d) Aluminium is an excellent oxidizing agent

46) When Al us added to KOH solution .

a) O_2 is evolvedb) H_2O is produced c) H_2 is evolved✔ d) No reaction occurs

47) Which of the following is not characteristic property of carbon ?

a) Multiple bond fomation b) Catenation c) Highest electronegative element of group d) Availability of d orbital for bonding✔

48) The melting point of Sn and Pb is less as compared to group III elements because .

a) They are large in size b) They do not use four valence electrons✔ c) They are metalloids d) They are all metals

49) Opal is a hydrated variety of ________

a) Silicon b) Sandc) Quartz✔ d) None of these

50) Carbon have tendency of linkage of identical atoms , which is called .

a) Catenation b) Self linkage c) Both A & B✔d) None of these

51) What is % age of calcium phosphate in bone ash ?

a) 20 b) 40 c) 80 ✔ d) 60

52) Which of the following is not the property of phosphorous ?

a) It means light beaing b) Rich source of phosphorous in bone ash✔ c) It does not exist free in nature d) It does not exist in allotropic

53) Phosphorous has the oxidation number +3 in .

a) Metaphosphoric acid b) Phosphorous acid✔ c) Orthophosphoric acid d) Pyrophosphoric acid

54) Which allotropic form of phosphorus is very reactive & poisnonous ?

a) Red b) Black c) Violet d) White✔

55) Molecular formula of white phosphorus is .

a) P4 ✔ b) P c) P3 d) P2

56) Which phosphorous is most stable ?

a) White b) Black ✔ c) Red d) All are equal

57) Which of the following shows phosphorescence ?

a) Yellow P b) Black P c) White P ✔ d) Red P

58) The most poisonous form of phosphorous is .

a) White ✔ b) Red c) Black d) Amorphous

59) In contact process inpurities of Arsenic are removed by .

a) $Fe(OH)_3$ ✔ b) $Al(OH)_3$ c) $Cr(OH)_3$ d) Fe_2O_3

60) The volatility of H2SO4 is low due to .

a) Strong bonds b) Covalent bonds c) High molecular mass d) Hydrogen bonding ✔

61) Cons . H2SO4 dehydrate the oxalic acid into .
a) $CO_2 + H_2O$ b) $CO + H_2O$ c) $C + H_2O$ d) $CO + CO_2 + H_2O$ ✔

62) If current is allowed to pass through pure conc . H2SO4 . It behaves as .
a) Good conductor b) Weak conductor c) Non conductor✔ d) Ionize into H^+ & $HSO4^{-1}$

63) Which one of the following is wrong statement about H2SO4 ?
a) Sulphonating agent b) Reducing agent✔ c) Highly viscous d) Oxidizing agent

64) Which compound will give carbon with concentrated H2SO4 ?
a) Starch ✔ b) Ethy1 Alcohol c) Oxalic Acid d) Formic Acid

65) Which of the following is called oil of vitriol ?
a) H2S b) H_2SO_3 c) H_2SO_4 ✔ d) HNO_3

66) At 180C the specific gravity of H2SO4 is .
a) 1.891 b) 1.834 ✔ c) 2.101 d) 1.740

67) When sugar in treated with Conc . H2SO4 , it becomes black due to .
a) Decolourization b) Dehydration ✔ c) Hydrolysis d) Hydration

68) Which of the gas cannot be dried over conc . H_2SO_4 ?
a) SO_2 b) N_2 c) NH_3 ✔ d) H_2

69) Formula of oleum is .
a) H_2SO_4 b) $H_2S_2O_7$ ✔ c) $H_2SO_4 + SO_3$ d) None of these

70) Which halogen occur naturally in positive oxidation state ?
a) F b) Cl c) Br d) I ✔

71) Which is the strongest oxidizing agent in the following ?
a) I_2 b) Cl_2 c) F_2 ✔ d) Br_2

72) Which of the following halogens will not form oxyacid ?
a) Cl b) F ✔ c) Br d) I

73) All halogens act as oxidizing agents when .
a) They combine with non - metals b) They combine with metals c) They combine with noble gases d) Both A & C✔

74) Which silver salt is sparingly soluble in H2O ?
a) AgF b) AbBr c) AgCl ✔ d) AgI

75) In the preparation of Cl2 from HCl , MnO2 acts are .
a) Reducing agent b) Dehydrating agent c) Oxidizing agent✔ d) Catalytic agent

76) The Strongest acid in halogen acid is solution is .
a) HF b) HCl c) HBr d) HI ✔

77) Which one is perchloric acid ?
a) HClO b) $HClO_2$ c) $HClO_3$ d) $HClO_4$ ✔

78) Which one is chlorous acid ?
a) HClO b) $HClO_2$ c) $HClO_3$ d) $HClO_4$ ✔

79) The weakest oxyacid of Cl is .
a) HclO ✔ b) $HClO_2$ c) $HClO_3$ d) $HClO_4$

80) The decomposition of potassium chlorate is a disproportionation reaction which gives .
a) $KCl + O_2$ ✔ b) $KClO_2 + KCl$ c) $KCl + Cl_2$ d) KClO + KCl

81) Which of the following cannot be bleasched by the bleacing powder ?
a) Cotton b) Paper pulp c) Linen d) Silk ✔

82) For bleaching powder which statement is incorrect ?
a) Reacts with dilute acid to release Cl_2 b) Highly soluble in water ✔ c) Light yellow coloured powder d) Oxidizing agent

83) Which acid has highest boiling point ?
a) HF ✔ b) HBr c) HCl d) HI

84) Oxidation state of Cu in K2[Cu(CN)4] in.
a) +4 b) +3 c) +2 ✔ d) +6

85) Group VII-B of transition elements contains .
a) Cu , Ag , Au b) Mn , Tc , Re ✔ c) V , Nb , Ta d) Fe , Ru , Os

86) Fe+3 is strongly paramagnetic and has .
a) 2 unpaired electrons b) 4 unpaired electrons c) 3 unpaired electrons d) 5 unpaired electrons ✔

87) Transition elements form complexes because they have .
a) Small sizes b) Vacant d - orbitals✔ c) Strong binding energy d) Large nuclear charge

88) The maximum oxidation state is shown by which of the following transition elements ?
a) Chromium b) Iron c) Cobalt d) Managanese✔

89) Which one of the following ions is colourless ?
a) Sc^{+3} ✔ b) Ti^{+3} c) V^{+3} d) Cr^{+3}

90) Which of the following pairs is strongly paramagnetic ?
a) Mn^{+2} , Fe^{+2} b) Mn^{+3} , Fe^{+2} c) Mn+2 , Fe+3 ✔ d) Mn+3 , Fe+3

91) Zn^{+2} salts are colourless due to .
a) No unpaired d – electrons ✔ b) All d - orbitals are empty c) All d - electrons are unpaired d) Tow d - orbitals are hydridized

92) Which is more acidic oxide in following .
a) MnO b) Mn_2O_3 c) MnO_2 ✔ d) Mn_2O_7

93) Steam cracking will produce .

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a) Cyclic compounds b) Lower unsaturated bydrocarbons ✔ c) Aromatic compoundsd) Branched compounds

94) Gasoline of higher octane number is produced by .

a) Thermal cracking b) Catalytic cracking✔ c) Steam cracking d) Reforming

95) The reaction $C_8H_{18} \rightarrow C_3H_6$ + Fragments is .

a) Catalytic oxidation b) Isomerization c) Synthesis d) Cracking ✔

96) Breaking down of large molecule by beating at high temperature and pressure is called __________ cracking .

a) Thermal ✔ b) Catalytic c) Steam d) None of these

97) The fractional distillation of petroleum yield only about ________ gasoline.

a) 10 % b) 20 % ✔ c) 30 % d) 40 %

98) -SH functional group is called

a) Carboxy 1 b) Nitro c) Mercapto ✔ d) Cyano

99) The group of -C \equiv N is .

a) Mercapto b) Cyano ✔ c) Nitro d) None of these

100) Which of the following is an example of alkanal ?

a) Acetaldehyde ✔ b) Alcohol c) Acetone d) Phenol

101) The state of hybridization of carbon atom in Ethyne .

a) sp ✔ b) sp_2 c) dsp_2 d) sp_3

102) The bond angle between any two Hybridized Orbitals is of .

a) 1800b) 109.50 c) 1200 ✔ d) 107.50

103) Carbon atom of carboxuI group is .

a) sp_3 hydridized b) sp_3d hydridized c) sp_2 hydridized ✔ d) sp hydridized

104) The state of hybridization of " C " in ethane is .

a) sp_3 ✔ b) sp c) sp_2 d) dsp_3

105) The state of hybridization of carbon in ethylene is .

a) sp_3 b) sp_2 ✔ c) sp d) dsp_2

106) The Carbon of CarbonyI Group is .

a) Sp_3 Hybridized b) Sp Hybridized c) Sp_2 Hybridized✔ d) dSp_2 Hybridized

107) The state of hybridization of carbon atom in ethane is

a) sp_3 b) sp_2 ✔ c) sp d) ds_{p2}

108) Carbon atom in which of the following is sp2 - hybridized

a) CH_3CN b) $CH \equiv CH$ c) HCOOH ✔ d) CH_2Cl_2

109) How many sigma electrons present in ethylene ?

a) 2 b) 5 c) 8 d) 10 ✔

110) Number of possible chain isomers of alkane C5H12 are .

a) 2 b) 3 ✔ c) 4 d) 5

111) Ethers show the phenomenon of

a) Position isomerism b) Metamerism c) Cis - trans isomerism d) Functional group isomerism ✔

112) Both CH_3COOH and $CHOOCH_3$ show isomerism .

a) Postion b) Chain c) Geometric d) Functional group ✔

113) The hydrocarbon having octane number 100 is .

a) Neo - octaneb) n - hexane c) Neopentane d) Iso - octane✔

114) The chain isomers shown by pentane are .

a) 2 b) 5 c) 4 d) 3

115) Which isomerism can be possible for 2 - chloro 3 - methyI butane ?

a) Functional group isomerism b) Position isomersm✔ c) Chain isomerism d) Metamerism

116) n - butyI alcohol and diethyI ether are .

a) Geometric isomers b) Functional group isomers✔ c) Position isomers d) Metamers

117) The compound having molecular formula C_6H_{14} has chain isomers .

a) 6 b) 4 c) 5 ✔ d) 3

118) Glucose and fructose are isomers .

a) Chain isomers b) Functional group isomers ✔ c) Position isomers d) Metamers

119) The isomeris shown by alkanes is

a) Skeletal ✔ b) Position c) Geometric d) Metamerism

120) For a ketone having molecular formula C5H10O , the number of possible metamers are

a) 2✔ b) 3 c) 4 d) 5

121) Alkenes are also called .

a) Paraffins b) Olefins ✔ c) Earbenes d) CarbonyI compound

122) Hydrolysis R-MgX gives .

a) Alkene b) Alkanes ✔ c) ALkyne d) Alcohol

123) Lindlar's catalyst is .

a) $Ba/PbSO_4$ b) $Pd/PbSO_4$ Quinone c) Quinone $Pd/PbSO_4$ ✔ d) $Pb/BaSO_4$ Quinone

124) Symmetrical alkanes are prepared by .

a) Kolbe's reaction b) Clemensen reaction c) Wurtz reaction d) Both A & B✔

125) The most reactive halogen in the halogenation of alkane under sunlight is .

a) Cl_2 ✔ b) Br_2 c) I_2 d) None of these

126) Sabatier-Sendern's reaction can be used to prepare .

a) Alkyne b) Alkanes ✔ c) Alkenes d) Alkenes and Alkynes

127) The dehydration of tertiarty alcohols is carried out with .

a) 20 % H_2SO_4 ✔ b) 35 % H_2SO_4 c) 30 % H_2SO_4 d) 25 % H_2SO_4

128) Which one is not property or uses of mustard gas ?
a) Used in 1st world war b) High boiling liquid c) Powerful vesicant d) High boiling gas ✔

129) When I-chloropropane is reacted with alcoholic KOH , the product obtained is .
a) Propane b) Propene ✔ c) Propyne d) Butane

130) Electrolysis of aqueous solution of potassium acetate gives .
a) C_3H_8 b) C_2H_2 c) C_2H_4 d) C_2H_6 ✔

131) Baeyer's reagent is used to identify .
a) Ethene ✔ b) Methane c) Ethane d) Ethnol

132) When acetylene reacts with acetic acid , the product form is .
a) Acrylic acid b) Acrylo nitrile c) Vinyl acetate ✔ d) Ethyl acetate

133) The presence of double bond in alkenes cannot be identified by .
a) Br_2 water b) $KMnO_4 + H_2O$ c) Ozonolysis d) Tollen's test✔

134) The most likely product of addition of H - Cl to 2-methyI-2-butene is .
a) 3 - Chloro - 2 - methyl butane b) 1 - Chloro - 2 - methyl butane c) 2 - Chloro - 2 - methyl butane✔ d) 3 - Chloro pentane

135) The ease of dehydration of alcohol to produce alkene is .
a) Primary > Secondary > Tertiary b) Secondary > Tertiary > Primary c) Tertiary > Primary > Secondary d) Tertiary > Secondary > Primary ✔

136) Addition of O_2 in ethane in the presence of Ag gives .
a) Ethylene oxide ✔ b) Ethane c) Ethanol d) Acetic acid

137) Which of the following when reacted with ozone produces methanal ?
a) Methane b) Ethane ✔ c) Ethene d) Ethyne

138) Ozonolysis of ethene causes breaking of C - C bond , the product is .
a) Formaldehyde✔ b) Ethylene glycol c) Acetaldehyde d) Ethylene chlorohydrin

139) Which of the following gases is powerful vesicant ?
a) Marsh gas b) Mustard gas✔ c) Ozonide d) Butane

140) MethyI 1,3 Butadiene is called .
a) Stgrene b) Cumene c) Chloroperene d) Isoperene✔

141) Which of the following is the major product when HBr reacts with 2-butene ?
a) 2-bromobutane✔ b) 1,1 bromobutane c) 1-bromobutane d) 1, 2 bromobutane

142) Which compound is the most reactive ?
a) Benzene b) Ethene✔ c) Ethane d) Ethyne

143) When calcium carbide is treated with water we get .
a) Ethyl formate b) Acetaldehyde c) Ethylene d) Ethyne ✔

144) Which of the following is used for the manufacturing of polyvinyI chloride ?
a) Ethylene b) Propylene c) Ethyne ✔ d) Ethane

145) 2,3 - dibromo butane gives 2-butyne when it is treated with .
a) Zn b) H_2SO_4 c) Aqueosu KOH d) Alcohol + KOH ✔

146) Ethyne when passed into the solution of cuprous chloride and NH4Cl , it gives .
a) Methyl nitrile b) Acrylonitrile c) Vinyl Acetylene ✔ d) Benzene

147) Which of the following is liquid at room temperature ?
a) Ethyne b) Propyne c) Butyne d) Pentyne ✔

148) The number of sigma and Pi bond in 1 - butene 3 - yne are .
a) 8 - sigma and 2 Pi b) 7 - sigma and 3 Pi✔ c) 5 - sigma and 5 Pi d) 6 - sigma and 2 Pi

149) It is dangerous to work with liquid C2H2 because .
a) It readily catches fire b) It is explosive ✔ c) It is highly volatile d) It is not very reactive

150) Addition of water to acetylene takes place in presence of .
a) Ni b) $HgSO_4/H_2SO_4$ ✔ c) $ZnCl_2$ d) Cu

151) Polymerization of acetylene forms .
a) Propane b) Butane ✔ c) Benzene d) Acetaldehyde

152) Conversion of unsaturated hydrocarbon to saturated hydracarbons in presence of catalyst is called .
a) Halogenation b) Hydrogenation✔ c) Hydroxylation d) Dehydrogenation

153) Benzene can be prepared by polymerization of .
a) Ethene b) Ethane c) Acetylene ✔ d) Propene

154) The reaction of bromobenzene with ethyI bromide in the presence of Na in dry ether will give .
a) Toluene b) Benzene c) Xylene d) Ethyl benzene ✔

155) Oxidation of ethyI benzene in presence of KMnO4 gives .
a) Phenol b) Benzyl alcohol c) Benzoic acid ✔ d) Maleic anhydride

156) Which one is not a meta directing group ?
a) -COOH b) -CHO c) -CORd) -NH2 ✔

157) Molecular formula of benzyI chloride .
a) $H5C_6CCl_3$ b) $H_5C_6HCl_2$ c) $H_5C_6CH_2Cl$ ✔ d) $H_5C_6H_2CH_2Cl$

158) The \pi - electrons of benzene are not readily available for weak electrophiles because is has .
a) sp2 hydridization b) Planar hexagonal structure c) Delocalization of electrons ✔d) Conjugation

159) Which one is a Friedel Crafts catalyst ?
a) PCl_5 b) PCl_3 c) $AlCl_3$ ✔ d) $Al(OH)_3$

160) The reaction of benzene with ozone finally gives .
a) Glyoxal b) Glycol c) Glycerol d) Benzoic acid

161) Which one is not an ortho and para directing group ?
a) $-NH_2$ ✔ b) -OH c) $-OCH_3$ d) -CHO
162) Nitration of Nitrobenzene at 950C will give .
a) 1,2 dinitrobenzene b) 1,4 dinitrobenzene c) 1,3 dinitrobenzene✔ d) 1,2,6 dinitrobenzene
163) Which of the following is not easily sulphonated ?
a) Para-xylene b) Meta-xylene c) Ortho-xylened) Benzene ✔
164) Which of the following is not an electrophile ?
a) BF_3 b) $AlCl_3$ c) $ZnCl_2$ d) NH_3 ✔
165) The compound that is nitrated with difficult is .
a) Toluene b) Nitrobenzene ✔ c) Benzene d) Phenol
166) Which of the following groups is an ortho and para directing in disubstitution benzene ?
a) -COOH b) -N+ R3 c) NH2 ✔ d) -NO2
167) If B forms glyoxal when it is treated with ozone , then B is
a) Ethene b) Ethyne c) Benzene ✔ d) Cyclohexane
168) Ortho and para derivative are obtained by halogenation of .
a) Nitrobenzene b) Toluene ✔ c) Benzaldehyde d) Benzene
169) The reactivity of alkene is due to _________ and availability of \pi electron for electrophilic reaction .
a) \pi bond ✔ b) Covalent bond c) Ionic bond d) None of these
170) _______ does not undergo polymerization .
a) Benzene ✔ b) Alkene c) Alkane d) None of these
171) Benzene is highly _________ compound and at the same time it is very stable molecule .
a) Saturated b) Unsaturated ✔ c) Organic d) None of these
172) Benzene is resistant to _________
a) Halogenation b) Sulphonation c) Oxidation ✔ d) Reduction
173) Which compound is the most reactive one ?
a) Benzene b) Ethene ✔ c) Ethane d) Ethyne
174) When ethyI iodide reacts with sodium methaoxide it gives .
a) Methyl ethyl ether✔b) Ethyl iodide c) Diethyl ether d) Ethernol
175) Best reagent for preparing a chloroalkane from alcohol is .
a) $SOCl_2$ ✔ b) $ZnCl_2/HCl$ c) PCl_3 d) Cl_2/CCl_4
176) AlkyI halide can be prepared by the halogenation of _______
a) Alkane ✔ b) Alkene c) Alkyne d) None of these
177) Alcohols may be converted to the corresponding alkyI halides by the action of halogen acid in the presence of .
a) V_2O_5 b) PCl_3 c) $ZnCl_2$ ✔ d) None of these
178) Alcohols react with SOCl2 in the presence of _________
a) $ZnCl_2$ b) Pyridine ✔ c) Amylase d) None of these
179) SN2 Mechanism involves .
a) 1st order kinetics b) 2nd order kinetics✔ c) 3rd order kinetics d) Zero order kinetics
180) An alkyI halide can be converted into alcohol by .
a) Addition b) Substitution ✔ c) Elimination d) Dehydrogenation
181) In SN1 reaction , the first step is the formation of .
a) Carbanion b) Free radical c) Carbocation ✔ d) None of these
182) Which of the following is a poor leaving group ?
a) $-H_5O_4$ b) -I c) $-NH_2$ ✔ d) -Br
183) Which of the following compounds undergo an elimination reaction when treated with hot ethanolic potassium hydroxide ?
a) $Br-CH_2-Br$ b) Br_3C-CBr_3 c) $(CH_3)_2C=CBr2$ d) CH_3-CH_2-Br ✔
184) SN2 reactions can be carried out with .
a) Primary alkyl halide ✔ b) Tetiary alkyl halide c) Secondary alkhyl halide d) Any type of alkyl halide
185) \beta - elimination is bimolecular elimination when it involves .
a) First order kinetics b) Third order kinetics c) Second order kinetics ✔ d) Zero order kinetics
186) Reaction of alkyI halide with NH3 gives .
a) Nitriles b) Amines ✔ c) Nitro alkane d) Imine
187) Hydrolysis of Ter. ButyI bromide follows SN1 mechanism . The rate is
a) Greater with OH- b) Greater with alkhyl halide ✔c) Greater with H2O d) Equal with OH- and H_2O
188) Which is a good leaving group ?
a) I- ✔ b) OH- c) RO- d) NH2 -
189) What will be the mechanism of the reaction ? C2H5I + 2NH3 \rightarrowC2H5NH2 + NH4I
a) SN_1 b) Nucleophilic addition c) SN_2 ✔ d) Electrophilic substitution
190) During SN_2 mechanism carbon atom changes its hybridization from .
a) $sp \rightarrow sp_2$ b) $sp_2 \rightarrow sp_3$ ✔ c) $sp_3 \rightarrow sp_2$ d) $sp_3 \rightarrow sp$
191) In elimination reaction of alkyI halide , the site more susceptible for the nucleophilic attack is .
a) α - carbon b) α - hydrogenc) β - carbon d) β - hydrogen ✔
192) Which one may not act as electrophile ?
a) NH^{4+} b) BF_3 c) NH_3 ✔ d) H^+
193) Which one is not a nucleophile ?
a) NH_3 b) H_2S c) H_2O d) BF_3 ✔

194) SN1-reactions are easily given by .
a) Primary alkyl halides b) Secondary alcohols c) Secondary alkyl halides d) Tertiary alkyl halides ✔

195) CH_3 - CH_2 - CH_2 -CH_2 - Cl on reaction with alcoholic KOH gives
a) 2-Butanol b) 2-Butene c) 1-Butene ✔ d) 2-Butanol

196) In ter-butyl alcohol , the tertiary carbon is bonded to .
a) Three hydrogen atoms b) One hydrogen atomsc) Two hydrogen atomsd) No hydrogen atoms ✔

197) Lucas reagent used to distinguish the pri , sec & ter alcohol consists of .
a) HBr & $MgCl_2$ b) HBr & $ZnCl_2$ c) HCl & $ZnCl_2$ ✔ d) HCl & $MgCl_2$

198) Primary , secondary and tertiary alcohols can be distinguished by .
a) Tollen's Test b) Lucas Test ✔ c) Fehling Solution Test d) Iodoform Test

199) Which compound will not give iodoform test on on treatment with I2.NaOH ?
a) Acetaldehyde b) Acetone c) Butanone d) Methanol ✔

200) Which liquid is called wood spirit ?
a) CH_3 – OH ✔ b) C_2H_5 - OH c) CH_3COOH d) CH_3 - O - CH_3

201) _______ is used as a solvent for fats oils , paints , varnishes .
a) Methanol ✔ b) Ethanol c) Propanol d) None of these

202) _______ is used as drink in some countries .
a) Methanol b) Ethanol ✔ c) Propanol d) None of these

203) Ethanol is also used in the __________ of specimen.
a) Preparation b) Preservation ✔ c) Both A & B d) None of these

204) Dry distillation of calcium acetate gives .
a) Methanal b) Ethanal c) Acetone ✔ d) Methanol

205) Dry distillation of calcium formate gives
a) Methanol b) Ethanal c) Acetone d) Methanal ✔

206) Formamint contains .
a) Formaldehyde and Lactose ✔ b) Formaldehyde and Fructose c) Formaldehyde and Menthol d) Formaldehyde and Ascorbic acid

207) Catalyst used for the laboratory preparation of formaldehyde is .
a) Cd-asbestos b) Pb-asbestos c) Pt-asbestos ✔ d) Cu-asbestos

208) C = O and C = C bonds are differentiated by .
a) Hydridization of C-atom b) Bond length ✔ c) Planar structures d) Undergo addition reaction

209) The oxygen atom has a partial negative charge on it is a .
a) Electrophilic b) Nucleophilic ✔ c) Both A & B d) None of these

210) The nucleophilic addition reactions of carbonyl group are catalyzed by __________
a) Oxygen b) Acids c) Bases d) Both B & C✔

211) Aldehyde react with hydroxyl amine in acidic solution to give .
a) An oxime ✔ b) Aldolc) Polymer d) Acetic acid

212) Formaldehyde gives metaformaldehyde on
a) Oxidation b) Condensation c) Cyclization d) Polymerization✔

213) Formaldehyde reacts with Grignard's reagent to produce .
a) Primary alcohols✔ b) Secondary alcohols c) Tertiary alcohols d) Sterols

214) The general formula for haloform is .
a) CHX_3 ✔ b) CH_2X_2 c) CH_3Xd) CX_4

215) In the manufacturing of plastic such as bakelite , which of the following substance is used ?
a) Formic Acid b) Formaldehyde ✔ c) Acetic Acid d) Acetaldehyde

216) Which one has yellow or orange crystalline ppt ?
a) Acetone hydrazone b) Ethanal oxide c) 2 , 4-DNPH ✔ d) Bisulphite addition product

217) The compound which reacts with Tollen's reagent .
a) HCHO ✔ b) $H_3C.CO.CH_3$ c) $H_3C.COOH$ d) $H_3C.CO.C_2H_5$

218) Which of the following compound will react with Fehling's solution ?
a) HCOOH b) $H_3O.CHO$ ✔ c) H_3CCOOH d) H_3CO - CH_3

219) Aldehydes and Ketones can be differentiated from each other by using .
a) 2,4 dinitophennyl hydrazine b) Hydrazine c) Hydroxyl amine d) Fehling solution test ✔

220) Which of the following reagents is composed of ammonical silver nitrate ?
a) Benedict's Solution b) Tollen's Reagent ✔ c) Fehligh Solution d) Molish Reagent

221) Tollen's reagent is .
a) Alkaline solution containing potassium tartarate b) Alkaline solution containing potassium citrate c) Ammonical silver nitrate ✔ d) Ammonical Cu2Cl2

222) Which of the following aldehydes is used to prepare urotropine medicine ?
a) Acetaldehyde b) Acetone c) Formaldehyde ✔ d) Enthyl alcohol

223) ________ is used silvering of mirror .
a) Acetaldehyde b) Ketone c) Formaldehyde ✔ d) Both A & C

224) _______ % aqeous solution called formalin .
a) 30 % b) 40 % ✔ c) 50 % d) 60 %

225) _________ is used in making formamint .
a) Ketone b) Acetaldehyde c) Fomaldehyde ✔ d) None of these

226) ________ is used in the processing of anti-poliovaccine.
a) Formaldehyde✔ b) Acetaldehyde c) Ketone d) None of these

227) _________ is used to make phenolic resins and synthetic drugs .

a) Acetaldehyde ✔ b) Ketone c) Both A & C d) None of these

228) Ethanol can be converted into Ethnoic acid by .

a) Fermentation b) Hydration c) Hydrogenation d) Oxidation✔

229) Organic compounds containing -CN group are called .

a) Cyanides b) Nitrites c) Nitrates d) Nitriles ✔

230) Which of the following alcohols are readily oxidized to give carboxylic acids an reacting with $K_2Cr_2O_7$?

a) Primary ✔ b) Secondary c) Tertiary d) Dioles

231) AlkyI nitriles can be prepared by treating alkyI halides with alcoholic .

a) Calcium cyanide b) Potassium cyanide✔ c) Phosphorous cyanide d) Calcium carbide

232) In the formation of ester from carboxylic acids , the -OH group is replaced by .

a) -R b) -COOR c) –OR ✔ d) -COR

233) Acetaldehyde and acetic acid can be distinguished with .

a) Na_2SO_4 b) NaOH c) $AgNO_3$ + NH_4OH ✔ d) Help of litmus

234) Slight oxidation of primary alcohol gives .

a) Ketone b) Organic acid ✔ c) Aldehyde d) An ester

235) Crboxylic acids are dehydrated on heating strongly in the presence of .

a) Al_2O_3 b) P_2O_5 ✔ c) Conc. H_2SO_4 d) Fe_2O_3

236) The reactivity of carboxylic acid is due to presence .

a) Carbolic acid b) Carboxyl group✔ c) Both A & B d) None of these

237) The carboxyI group shows the chemistry of both carboxyI and _______ groups .

a) HydroxyI ✔ b) AcetyI acid c) Carboxylic acid d) None of these

238) The carbon atom of a carboxyI group is hybridized .

a) sp b) sp_2 ✔ c) sp_3 d) sp_4

239) Which of the following reactions involves displacement of OH group of the carboxylic acids ?

a) RCOOH + Na → b) RCOOH + NaHCO3 → c) RCOOH + NaOH → d) RCOOH + PCl5 →✔

240) The flavor of octylacetate is .

a) Orange ✔ b) Apricot c) Banana d) Jasmine

241) Ester benzyI acetate has the flavour

a) Orange b) Jasmine ✔ c) Apricot d) Banana

242) Which of the following ester has banana flavour ?

a) Ethyl butyrate b) OctyI acetate c) AmyI acetate ✔ d) ButyI acetate

243) Amylacetate has the flavor of .

a) Apricot b) Banana ✔ c) Orange d) Jasmine

244) A carboxylic Acid is treated with lime water , the product is distilled in dry state , if forms acetone , the carboxylic acid is

a) HCOOH b) CH_3COOH ✔ c) Propionic acid d) Succinic acid

245) Vinegar is dilute solution of Acetic Acid .

a) 1 - 5 % b) 4 - 10 % ✔ c) 10 - 15 % d) 10 - 20 %

246) Acetic Acid is obtained when .

a) Methanol is oxidized b) Ethanol is oxidized✔ c) Methanol is reduced d) Methanol is fermented

247) Acetic usually exists as .

a) Monomer b) Dimer c) Trimer ✔ d) Polymer

248) Acetic acid exists as dimer in benzene due to .

a) Presence of hydrogen at α-carbon b) Presence of carboxylic group c) Condensation reaction d) Hydrogen bonding✔

249) Two moles of acetic acid are heated with P_2O_5. The product formed is .

a) Butanoic Acid b) Acetic Anhydride✔ c) Ethanol d) Ethanal

250) Acetic Acid reacts with LiAlH4 to give .

a) C_2H_6 b) C_3H_7OH c) C_6H_5 - CH_2 - OH d) C_2H_5OH ✔

251) When aqueous solution of potassium salt of acetic acid is elecrolyzed the gas produced is .

a) Methane b) Ethane ✔ c) Ethene d) Ethyne

252) The reaction of acetic acid with sodium metal gives .

a) CO b) CO_2 c) HCHO d) H_2 ✔

253) Acetic acid was first isolated from .

a) Butter b) Vinegar ✔ c) Milk d) Red ant

254) The nutrients which are required in very small amount for the growth of plants are called .

a) Macronutrients b) Essential nutrients c) Micronuttrients ✔ d) Non-essential nutrients

255) Which of the following fertilizers contains 46\gamma N ?

a) NH_3 b) $(NH_2)_2CO$ ✔ c) NH_4NO_3 d) KNO_3

256) Which of the following is a macronutrient .

a) Iron b) Zinc c) Chlorine d) Calcium ✔

257) Good fertilizer must be .

a) Cheap ✔ b) Expensive c) Both A & B d) None of these

258) Good fertilizer must be soluble in .

a) Water ✔ b) Alcohol c) Ether d) None of these

259) One of the following is orgillaceous material .

a) Clay b) Marble c) Marine shell ✔ d) Lime

260) Cement was introduced by mason .

a) D.H, Whove b) Humphy Davy c) Joseph Aspdin ✔ d) Friedrick Mieschar

261) The diameter of rotary kiln in the manufacture of cement is .
a) 1 to 2 feet b) 2 to 4 feet c) 4 to 8 feet d) 8 to 15 feet ✔

262) The length of rotary Kiln in manufacture of cement is .
a) 100 - 300 ft b) 100 - 200 ft c) 300 - 500 ft ✔ d) 400 - 600 ft

263) The percentage of gypsum in cement is .
a) 2 % ✔ b) 10 % c) 3 % d) 5 %

264) Setting process of cement is based upon.
a) Hydrolysis b) Dehydration c) Hydration d) Hydrolysis and hydration ✔

265) The percentage of Silica in cement is .
a) 62 % b) 22 % ✔ c) 7.5 % d) 50 %

266) The main function of burning in rotary kiln is .
a) To reduce the impurities b) Combination of different oxides like CaO , SiO_2 , Fe_2O_3 and Al_2O_3✔ c) To dry the moisture of slurry d) To decompose limestone to unslaked lime

267) Which of the following substances has greater percentage in cement ?
a) MgO b) Al_2O_3 c) CaO ✔ d) SiO_2

268) The percentage of alumina in potralnd cement is .
a) 22 % b) 3.5 % c) 2.5 % d) 7.5 % ✔

Q.NO.2 (CH # 1,2,3,4,15)

1. The first electron affinity of oxygen is in negative sign but the second one is positive Why?
2. Diamond is a non-conductor but graphite is a good conductor Why?
3. Why oxidation number of noble gases is usually zero?
4. Why the metals are good conductors?
5. Give reason that hydration energy of Al^{3+} ions more than Mg^{2+} ions?
6. Define hydration energy with an example?
7. Define ''Electron Affinity" Why second electron affinity value is positive?
8. Hydration energy of the following ions are in the order Explain $Al^{+3}>Mg^{+2}>Na^{+}$
9. Why the ionic radius of a positive ion is smaller than that of its neutral atom?
10. Why first ionization energy of Mg is greater than that of Na?
11. Why size of an anion is always greater to that of its parent atom?
12. How does hydrogen resemble with alakali metals?
13. Give any two resemblances of hydrogen with group IV-A
14. Give four points in which Lithium differ from its own family members
15. Write formulas of Borax and Chile saltpeter?
16. Give two similar properties of Lithium and Magnesium
17. Write chemical formulas of the following metals? (i) Beryl (ii) Barite
18. Write formulas of Beryl and Sylvite
19. What happens when? (i) Lithium hydride is treated with water (ii) lithium carbonate is heated
20. What happens when: i) Li_2CO_2 is heated ii) Na_2CO_3 is heated
21. Write down formulae of the minerals: a) Dolomite b) Asbestos
22. What are advantages of Down's cell for the preparation of sodium on commercial scale?
23. What are the two major problems faced during the working of diaphragm cell?
24. Write four uses of Borax?
25. What is chemistry of Borax bead test?
26. How does H_3BO_3 act as an acid?
27. What is Borax bead Test?
28. Justify the solubility of borax changes with temperature
29. What are uses of Boric acids?
30. Why boric acid can't be titrated by NaOH?
31. What is effect of Heat on Boric acid?
32. How Aluminum reacts with aqueous sodium hydroxide?
33. Give any four uses of Aluminum
34. Aluminum sheets are said to be corrosion free Why?
35. Aluminum when burn in oxygen an intense white light is produced Explain
36. Give two similarities between carbon and silicon's?
37. Write formula of the following ores (i) Talc (ii) Zircon
38. How does NO act as oxidizing agent?
39. What happens when N_2O is dissolved in water?
40. How HNO_3 can be prepared in the laboratory?
41. Write four used of HNO_3?

42. How does HNO_2 acts as a reducing agent?
43. What is Aqua Regia? How does it dissolve noble metals?
44. Give the reaction of HNO_3 with carbon and sulphur
45. Why dinitrogen oxide is called Laughing gas?
46. What is the effect of dil HNO_3 on: (a) Mg (b) Cu
47. What is meant by fuming nitric acid?
48. Write two reactions for the preparation of phosphorus acid
49. Give definition of allotropy. Write allotropes of phosphoric
50. How H_3PO_4 is prepared on large scale?
51. P_2O_5 is powerful dehydrating agent Justify it with two chemical equations
52. Give reaction of P_2O_5 with (a) HNO_3 (b) C_2H_5OH
53. Give reaction of P_2O_5 with cold and hot water
54. How does P_2O_3 react with water in cold and hot states?
55. Orthophosphoric acid is a weak tribasic acid Prove it giving reactions with NaOH
56. Write two points of differences between Red and White Phosphorus
57. Write down two chemical equations which show that H_2SO_4 is dehydrating agent
58. Write two SO_3 dissolved in H_2SO_4 and not in water?
59. Give reactions of conc H_2SO_2 with oxalic acid and formic acid
60. H2SO4 acts as an oxidizing agent. Write two reactions
61. Justify that H_2SO_4 is king of chemicals
62. Why SO_3 gas is dissolved in $H2SO_4$ but not in water in contact process
63. How does H_2SO_4 react with: (a) Zn (b) Cu
64. What are micronutrients and macronutrients?
65. What are micronutrients required for proper growth of plants?
66. What is the role of potassium in growth of plants?
67. How urea is prepared from Ammonia?
68. What do you mean by prilling of urea?
69. What is the importance of Potassium Fertilizer?
70. Give significance of potash fertilizer
71. Define DAP. Write reaction for its preparation
72. What is the role of phosphorus in proper growth of plants?
73. How NH3 is given to the plants? Give its composition
74. What is Cement? Which raw materials are used for its preparation?
75. What is difference between Clinker and Cement?
76. Describe the average composition of Portland cement
77. Define clinker How it is converted to cement?
78. Explain reactions taking place in first 24-hours during setting of cement
79. What is meant by setting of Cement?
80. How Portland cement is made? Why gypsum is added in the cement?

Q.NO.3 (CH # 5,6,9,12,13)

1. Why HF is a weak acid than other Halogens acids?
2. Give reason why fluorine is gas iodine is solid?
3. How does fluorine differ from its family members?
4. Describe two uses of helium.
5. Halogens are strong oxidizing agents justify.
6. Why oxidizing power of F2 is higher than other halogens?
7. Why Iodine has metallic luster?
8. HF is a weak acid. Why?
9. Write four uses of Bleaching powder.
10. Write four properties of hydrogen fluoride.
11. Describe H-Bonding in HF molecule.
12. What is halothane? Give its two uses.
13. Reaction of Cl_2 with aqueous solution of NaOH at 15°C is a disproportionation reaction. Justify.
14. Perchloric acid is considered as a valuable analytical reagent. Why?
15. Write any two important applications of helium.
16. How bleaching powder can act as an oxidizing agent?
17. Give reaction of bleaching powder with NH_3 and HCl.

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18. Write four uses of Halogen.
19. What is bleaching powder? How it is prepared?
20. What are Freons and Teflon?
21. How XeF_2 and XeF_4 can be prepared?
22. Complete the following reaction. (a) $XeF_4 + NH_3 \rightarrow$? (b) $XeF_4 + Hg \rightarrow$
23. Write down the reaction of chlorine with cold and hot NaOH.
24. Give reason oxidation powder of halogens increase $F_2 > Cl_2 > Br_2 > I_2$
25. Complete the following reactions. (a) $CaOCl_2 + H_2SO_4 \rightarrow$? (b) $CaOCl_2 + 2HCl \rightarrow$
26. What are the various allotropic forms of Group VIA elements of periodic table
27. HF is less viscous liquid than water. Why?
28. Write two uses of helium.
29. Complete the following reactions: (a) $KClO_4$ (s) + $H2SO_4$ (conc.) → (b) $XeF_6 + H_2 \rightarrow$
30. Give two reactions to show H_2SO_4 as a dehydration agent.
31. What are polycyclic aromatic hydro-carbons? Give two examples.
32. How Aromatic Hydrocarbons are classified?
33. Write structural formula of: a) Nephthalene b) Diphenyl methane
34. Describe X-rays structure of Benzene.
35. How is the straight chain structure of benzene ruled out?
36. How will you prove that benzene has cyclic structure?
37. What is aromatization?
38. How benzene is prepared from sodium benzoate and phenol?
39. What is Wurtz-Fitting reactions?
40. What happens when benzene is heated with conc. H_2SO_4 at 80^oC?
41. Define meta-directing groups. Give two examples.
42. What does happen to benzene during Friedel Craft's reaction? Give mechanism of one reaction.
43. Give the mechanism of Nitration of benzene.
44. What is the general pattern of reactivity of benzene towards electrophiles?
45. What do you know about ozonolysis?
46. What happens when acidified $KMnO_4$ is added to methyl benzene and ethyl benzene?
47. Why hydroxyl group (OH) is other and para directing group?
48. Benzene is less reactive than Alkene, why?
49. What is difference between Aldehyde and Ketone?
50. How formaldehyde and acetaldehyde undergo polymerization?
51. How formalin is prepared on the commercial scale from methyl alcohol?
52. How formaldehyde is prepared in laboratory?
53. How will you distinguish between 2-pentanone and 3-pentanone?
54. Give reactions of Aldehyde with HCN and $CH_3 - CH_2 - OH$.
55. How aldehyde react with hydrazine? Give its mechanism?
56. What is ''Haloform Reaction''? Give its uses.
57. Give the mechanism of Cannizzaro's reaction.
58. Define aldol Condensation.
59. How aldehyde reacts with Ammonia derivative? Give its general mechanism?
60. What are condensation reactions?
61. Complete the reaction. i) $CH_3CHO + C_2H_5OH$ to? ii) $CH_3CHO + NH_2OH$ to?
62. Give the mechanism of addition of HCN to Acetone.
63. How acetone is oxidized with $K_2Cr_2O_7$ / H_2SO_4?
64. Justify that aldehydes with no \propto-hydrogen give Cannizaro's reaction.
65. Give mechanism of addition of HCN to acetaldehyde.
66. Discuss oxidation of Ketones with $K_2Cr_2O_7/H_2SO_4$
67. How will you prepare ethanaloxime from an aldehyde?
68. Why formaldehyde does not show Aldol Condensation?
69. What is iodoform test? Give two uses of it.
70. Write composition of Tollen's reagent? And which organic compounds are usually identified by it.
71. Why Tollen's test is also called silver mirror test?
72. What is sodium bisulphite test?
73. Discuss the reaction of an aldehyde with Tollen's reagent.
74. What is silver mirror test? Give an example.
75. Write four important uses of Acetaldehyde.
76. What happens when ammonium acetate is heated?
77. Write the formula of: a) Benzoic acid b) Pthalic acid
78. How is carboxylic prepared from Grignard's reagent?
79. How carboxylic acids are prepared by the oxidation of alkenes?
80. Why does mostly carboxylic acid exist as dimers?
81. Which ester gives banana and orange smell?
82. Write down mechanism of the reaction of $SOCl_2$ with acetic acid.

83. Write the mechanism of reaction between acetic acid and Ammonia.
84. How acetic acid reacts with: a) PCl_5 b) $SOCl_2$
85. Write equation for reaction of acetic acid with sodium carbonate.
86. How acetic acid is converted into ethanol?
87. How will you convert acetic acid into methane?
88. What is vinegar? How is it prepared from ethyl alcohol?

Q.NO.4 (CH # 1,2,3,4,15)

1. Define catenation.
2. What do you know about cracking of petroleum? Explain.
3. Differential between Homocyclic or Heterocyclic compounds.
4. What are Alicyclic compounds? Give two examples.
5. What are homocyclic compounds? Give two examples.
6. What are Amines and Imines? Give one example of each.
7. Define functional group. Give two examples of oxygen containing functional group.
8. Draw the structure of C_2H_5 and indicate bond angles?
9. Define the terms: a) Fractional Distillation b) Hybridization
10. Define metamerism with example.
11. Explain geometrical isomerism with example.
12. What are Isomerse and Tautomers?
13. Describe position isomerism with example.
14. What are the conditions for cis-trans isomerism?
15. 1-Butane does not show cis-trans isomerism but 2-butene does. Justify the statement.
16. Why compounds containing (C=C) bond show geometric isomerism?
17. Define Cis-Trans Isomerism. Give one example.
18. Alkanes are less reactive than Alkenes, comment.
19. How methane is converted to formic acid.
20. Give four uses of methane.
21. What is heat of combustion?
22. What is Baeyer's test to check the presence of carbon-carbon double bond?
23. What are clemmensen and Wolf-Kishner reduction reactions? How they differ?
24. Write down mechanism for the Kolbe's electrolytic method for the preparation of alkanes.
25. What is Raney-Nickel? Where it is prepared?
26. What is catalytic hydrogenation? Give an example.
27. Give four uses of ethene.
28. Give mechanism of bromination of ethene.
29. Write chemical reaction for the preparation of propene from: (i) CH_3-CH_2-CH_2-Br (ii) CH_3-CH_2-CH_2-OH
30. Why alkenes are called elefins?
31. Give four uses of Ethyne?
32. What is polymerization? How high quality polyethene is prepared from ethene?
33. How does Acetylene react with HBr?
34. Give reactions of HCN and NH_3 with CH = CH. Also mention Reaction Conditions?
35. How Ethyne is prepared on Industrial Scale?
36. What is hydrogenolysis? Give an example.
37. Why alkanes are less reactive organic compounds?
38. What happens when vic-dihalide is treated with Zn-dust?
39. When double bond and triple bonds are present in a compound, how are they named?
40. Write down structural formula of: a) Vinyl chloride b) Vinyl Cyanide
41. Why does Alkane show least-reactivity?
42. How would you prepare acetone from propyne?
43. Write two identification tests of 1-alkynes.
44. Benzene is polymer of acetylene. Justify.
45. Distinguish ethene from ethyne by a chemical reaction.
46. Why alkynes are slightly acidic in nature? Justify with an example.
47. What are primary and tertiary alkyl halides? Give one example each.
48. Define primary alkyl halide and secondary alkyl halide with one example.
49. Give reactions of ethyl bromide with a) CH_3COONa b) Zn / HBr
50. How does ethyl alcohol react with H_2SO_4 in two different ways?
51. Give an excellent method to preparation simple Alkyl Iodide.
52. Describe the best method for preparation of alkyl halides.
53. Give mechanism of SN_1 reactions.
54. Give only mechanism for SN_2 reactions.
55. What is leaving group and substrate?
56. Why does SN_2 mechanism give a product with inversion of configuration? Show with one reaction.

57. Convert ethyl bromide into: i) Ethane b) n-Butane
58. Define nucleophile and substrate with an example.
59. Describe mechanism of E_2 reactions of alkyl halide.
60. Describe the mechanism of E1 reaction.
61. How does alkyl halide react with sodium lead alloy?
62. Distinction between alcohol (CH_3CH_2OH) and Phenol ($C_6H_5 - OH$).
63. Ethyl alcohol is a liquid while methyl chloride is a gas. Give reason.
64. Prepare each of following compounds from acetaldehyde: a) Lactic acid b) Acetic acid
65. Write structural formula of the compounds. i) Carbolic acid ii) Glycerol
66. Write the name and structures of two polyhydric or Polyhydroxy alcohols.
67. 1What is difference between Monohydric and polyhydric alcohols? Give one example of each.
68. Define fermentation, give its conditions.
69. Absolute alcohol cannot be prepared by fermentation process. Why?
70. Ethanol gives different products with conc. H2SO4 under different conditions. Justify it.
71. Write equation for reactions of C_2H_5OH with PBr_3, PCl5
72. Give oxidation of primary and secondary alcohols.
73. How wood-spirit is prepared from water gas?
74. Ethanol has higher boiling point than diethyl ether. Give reason.
75. What is rectified spirit? How is absolute alcohol obtained from it?
76. Distinction between methanol (CH_3OH) and ethanol (CH_3CH_2OH).
77. What is Lucas test?
78. Give any four uses of methyl alcohol.
79. Give reaction of: i) Phenol with zinc ii) Benzene with SO_3.
80. Prepare the following compounds from phenol: i) 2,4,6-Trinitro phenol ii) Benzene
81. Give reaction of phenol with: a) Bromine water b) Conc. H_2SO_4
82. Describe method for preparation of phenol from sodium salt of benzene sulphonic acid.
83. Phenol behaves as an acid, explain.
84. How phenol can be converted into Benzene?
85. How does picric acid synthesis take place?
86. Give the reactions of phenol with conc. H_2SO_4 and acetyl chloride.

LONG Q.NO.5

1. What is Mendeleev's periodic table? Discuss improvements in Mendeleev's periodic table.
2. Explain the position of hydrogen over its group of periodic table with two similarities and two differences.
3. Discuss the position of hydrogen over VII-A group elements.
4. Explain similarities of hydrogen with halogens and dissimilarities with alkali metals.
5. Why hydrogen cannot be placed above alkali metals and halogens?
6. Give eight points of differences between Lithium and other members of the family?
7. Describe the process for the preparation of sodium metal on industrial scale by Down's cell? What are advantages of this process?
8. Describe the two problems involved in the manufacture of caustic soda by Nelson cell and how these problems are solved.
9. Describe the commercial preparation of sodium hydroxide by Diaphragm cell with diagram.

LONG Q.NO.6

1. What happen when dil HNO_3 and Cinc. HNO_3 react with Cu , Hg , Sn and Zn.
2. Write equation for the reaction of Conc. HNO_3 with: (i) HI (ii) Sn (iii) Cu (iv) Zn
3. Describe Birkeland and Eyde's process for the manufacture of Nitric acid.
4. Describe eight points of similarities of oxygen and Sulphur.
5. Give four reactions of H_2SO_4 as an acid.
6. How sulphuric acid is manufactured by contact process on industrial scale.

LONG Q.NO.7

1. What is cracking of petroleum? Explain any two ways in which cracking is carried out?
2. What is orbital hybridization? Explain SP-hybridization of carbon.
3. What is orbital hybridization explain sp_3-hybridization with the formation of $CH_2=CH_2$.
4. What is Isomerism? Discuss position Isomerism and geometrical Isomerism.
5. Write laboratory and industrial preparation of acetaldehyde.
6. Write a note on Cannizzaro's reactions.

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7. Describe the mechanism of aldol condensation.
8. Write a brief note on haloform reaction.
9. Describe mechanism for i) Cannizato's reaction ii) Aldehyde with $NH_2 - OH$.
10. How acid and base catalyse the nucleophilic addition reactions of carbon compounds? Give general mechanism of each reaction.

LONG Q.NO.8

1. 1.What do you mean by saturated and unsaturated hydrocarbons? How there are distinguished chemically? How these are distinguished chemically?
2. 2.Describe with examples the acidic nature of alkynes.
3. 9.Define polymerization, explain polymerization reaction of acetylene.
4. 14.Give comparison of Reactivates of Alkenes, Alkenes and Alkynes.
5. 29.Write four methods for the preparation of Alkenes.
6. 39.Prepare Ethane from Kolbe's Electrolytic method, Write down its mechanism.
7. 41.Explain with equation how alkenes can be prepared from Acid and Grignard's reagents.
8. 42.Write uses of Methane.
9. 45.How the presence of double bond is detected by using Baeyre's reagent?
10. 49.Define alkyl halide. Give three methods to prepare them from alcohols.
11. 50.Compare E_2 and E_1 mechanism for β –Elimination reactions?
12. 52.Differentiate between SN1 and SN2 reactions.

LONG Q.NO.9

1. What are Aromatic Hydrocarbons? How are they classified?
2. Define alicyclic compounds and aromatic compounds with one example in each case.
3. What is resonance? Explain the structure of benzene on the basis of resonance.
4. Explain Stability of benzene.
5. Discuss two Industrial and two laboratory methods to prepare Benzene.
6. What are Friedel-Crafts Reactions? Explain mechanism of alkylation and Acylation of Benzene.
7. Write chemical reactions for preparation of ethanol from Molasses and Starch.
8. Describe industrial preparation of ethanol. How will you distinguish between ethanol?
9. How is Methyl alcohol obtained on large scale from water gas? Draw diagram also.
10. What is Lucas test? How will you distinguish between primary, secondary and tertiary alcohols by this test?
11. Write two methods for preparation of phenol, how phenol reacts with Conc. HNO_3 and Bromine water
12. Describe acidic behavior of phenol. How does phenol react with alkali to give salt?

13. Write down Dow's method for preparing phenol. What is action of following on phenol:
i) Bromine water ii) HNO_3 at different temperatures